VGA RS232 Extender

EXT-VGARS232-141

User Manual

www.gefen.com

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INTRODUCTION

Congratulations on your purchase of the Gefen VGA RS232 Extender. Your complete satisfaction is very important to us.

About Gefen

We specialize in total integration for your home theater, while also focusing on going above and beyond customer expectations to ensure you get the most from your hardware. We invite you to explore our distinct product line. Please visit http://www.gefen.com for the latest offerings in High-Definition signal solutions or call us between the hours of 8:00 am and 5:00 pm Monday-Friday, Pacific Standard Time for assistance with your A/V needs. We'll be happy to assist you.

The Gefen VGA RS232 Extender

The Gefen VGA RS232 extends any VGA source to a monitor or digital signage application placed up to 330 feet (100 meters) using one CAT-5 cable. This product also extends RS-232 using the same CAT-5 cable, allowing access to control devices using RS-232.

How It Works

Place the Sender Unit next to the VGA source. Use the included VGA cable to connect the source to the Sender Unit. Connect the Receiver Unit to the monitor or digital signage display with a VGA cable (not supplied). Use one CAT-5 cable, up to 330 feet (100 meters), to connect the Sender Unit to the Receiver Unit. Connect an RS-232 serial cable from the RS-232 port on the Sender Unit to the RS-232 control device. Connect the RS-232 port on the Receiver Unit to the RS-232 device.

READ THESE NOTES BEFORE INSTALLING OR OPERATING THE GEFEN VGA RS232 EXTENDER

- CAT-5e cables should not exceed 330 feet (100 meters).
- Unshielded (UTP) CAT-5e is recommended.

Features

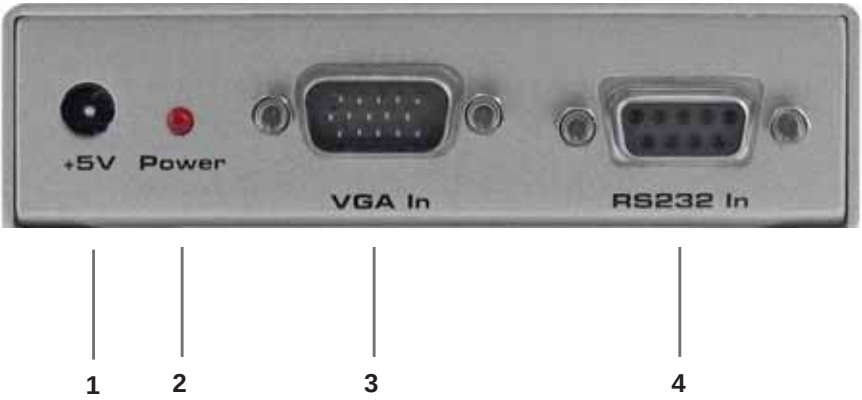
- Extends any VGA and RS-232 source up to 330 feet (100 meters)
- Supports resolutions up to 1920x1200
- All-digital signal transmission for zero signal loss
- Metal enclosure improves RF shielding

Package Includes

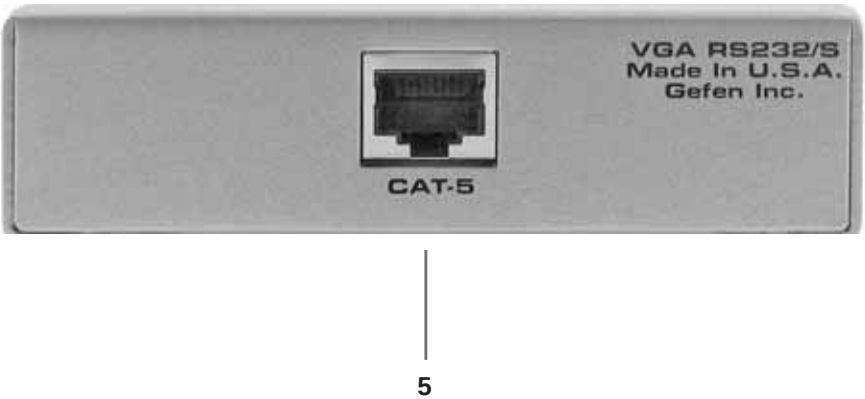
(1) Gefen VGA RS232 Extender Sender Unit
(1) Gefen VGA RS232 Extender Receiver Unit
(1) 6 ft. VGA cable (M-F)
(1) 6 ft. serial cable (M-F)
(2) 5V DC Power Supplies
(1) Set of Wall Mounting Plates
(1) User Manual

SENDER UNIT LAYOUT

Front



Back



SENDER UNIT DESCRIPTIONS

1 5V DC Power Connector
Connect the included 5V DC power supply to this connector.

2 Power Indicator
This LED will turn bright red once the included 5V DC power supply has been properly connected to the unit and the power supply has been connected to an available electrical outlet.

3 Locking VGA Port
Connect a VGA source to this port.

4 RS-232 Port
Connect the RS-232 host device to this port.

5 CAT-5 Output Jack
Connects the Sender Unit to the Receiver Unit using a CAT-5 cable.

RECEIVER UNIT LAYOUT

Front

1 2 3 4

Back

5 5

RECEIVER UNIT DESCRIPTIONS

1 Locking VGA Port
Connect a VGA source device to this VGA port.

2 RS-232 Port
Connect the RS-232 device to this port.

3 Brightness Trimpot
Adjusts the brightness of the picture.

4 Power Indicator
This LED will turn bright red once the included 5V DC power supply has been properly connected to the unit and the locking power supply has been connected to an available electrical outlet.

5 5V DC Power Connector
Connect the included 5V DC power supply to this connector.

6 CAT-5 Input Jack
Connects the Sender Unit to the Receiver Unit using CAT-5 cabling.

How to Connect the VGA RS232 Extender

1. Connect the VGA source to the Sender Unit using the provided VGA cable. Connect the VGA monitor to the Receiver Unit using a VGA cable.

2. Connect the RS-232 cable between the RS-232 controller and the RS-232 port on the Sender Unit.

3. Connect an RS-232 cable between the RS-232 device and the RS-232 port on the Receiver Unit.

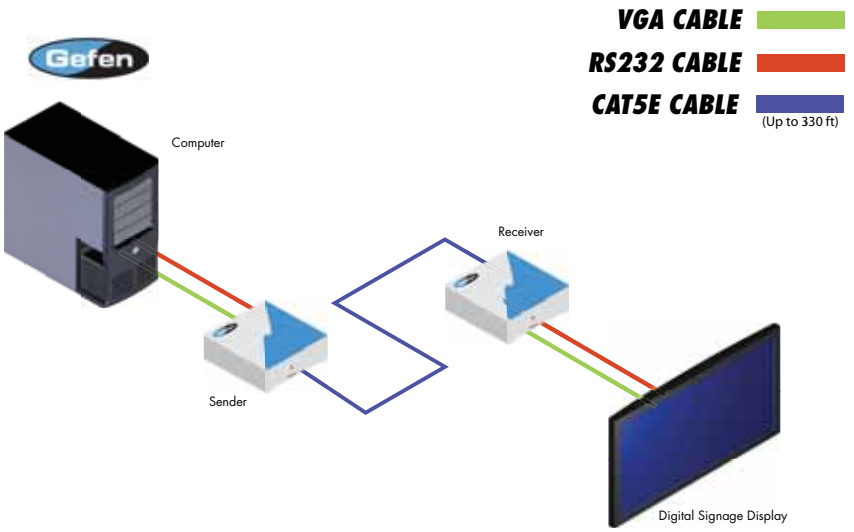
4. Connect a CAT-5e or CAT-6 cable between the CAT-5 port on the Sender Unit and the CAT-5 port on the Receiver Unit.

   NOTE: If terminating network cables in the field, adhere to the TIA/EIA568B specification (see page 12).

5. Connect the 5V DC power supplies to the Sender Unit and Receiver Unit. Connect the included AC power cords Plug the two (2) power supplies to an available electrical outlet. The LED on both the Sender Unit and the Receiver Unit will turn bright red, indicating that both units are powered.

6. Power on the VGA monitor and the VGA source.

Wiring Diagram for the VGA RS232 Extender



EXT-VGARS232-141

Brightness Control

The VGA RS232 Extender Receiver Unit has a brightness trimpot to adjust the brightness of the picture. If the picture appears too dark or too bright, following the instructions below.

Brightness trimpot

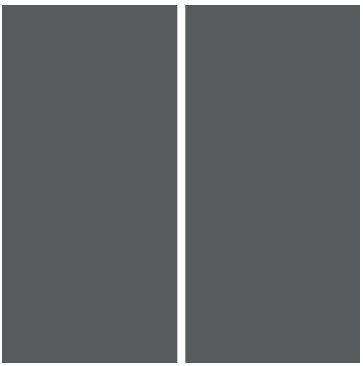
1. Insert a small flathead adjustment tool into the trim pot.
2. Turn the trim pot in a clockwise fashion until the trim pot stops turning. Do not force the trim pot beyond this point as it may break.
3. Turn the trim pot in millimeter increments in a counter-clockwise fashion until the desired brightness is reached.
4. Remove the trim pot adjustment tool.

Cable Skew and Color Divergence Control

To reduce the amount of crosstalk between twisted pairs within a CAT-5 cable, the rate of twist varies for each twisted pair. The rate of twist affects the length of each twisted pair and is referred to as *cable skew*.

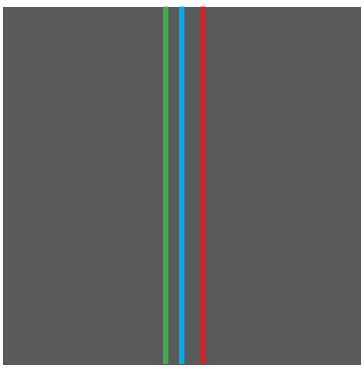
Normally, when a video signal with a single white line is displayed on the screen, each color component (red, green, blue) combines with the other to create the white line.

Normal video signal



However when extending a video signal over CAT-5, cable skew can cause each color component to arrive at the destination (display) at different times. This causes an undesirable effect known as *color divergence*, where one or more color components are shifted to the left or right.

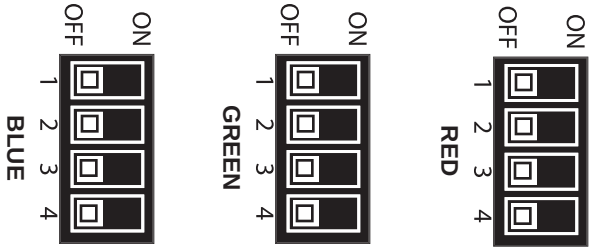
Video signal containing color divergence
(emphasized for illustrative purposes)



The VGA RS232 Extender allows for compensation of cable skew using three (3) DIP switch banks, located on the bottom of the Receiver Unit. To access the DIP switches, peel back the small strip of silver-grey tape. Each DIP switch bank controls a different color component: Red, Green, and Blue.

Default DIP switch settings for each bank

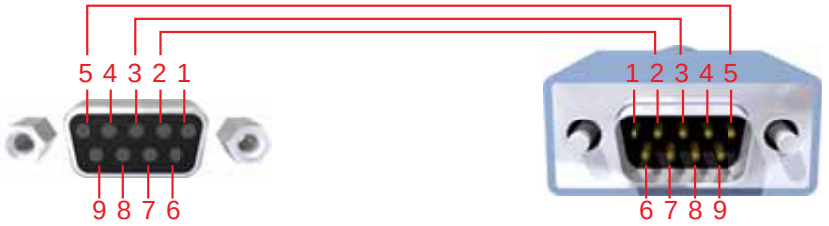
DIP Switch	Position
1	OFF
2	OFF
3	OFF
4	OFF



Since the colors in the output signal are directly related to the cable skew and cable length, it is recommended that the following DIP switch settings be used for best performance:

0-25 Feet	All DIP switches are set to OFF for all colors.
26-100 Feet	Set DIP switch #1 ON for all colors. 2,3,4 remain OFF.
101-200 Feet	Set DIP switch #2 ON for all colors. 1,3,4 remain OFF.
201-300 Feet	Set DIP switch #3 ON for all colors. 1,2,4 remain OFF.
301 Feet and Up	Set DIP switch #4 ON for all colors. 1,2,3,remain OFF.

Note that the table above should be used as a guideline. However, if a particular color component is not aligned with the remaining color components, adjust the DIP switch bank relating to the color component that requires correction.



Only Pins 2 (RX), 3 (TX), and 5 (Ground) are used on the RS-232 serial interface

This feature allows for easy integration into automated systems capable of transmitting RS-232 commands. Use the settings listed below to configure the RS-232

RS-232 Settings

Bits per second 19200

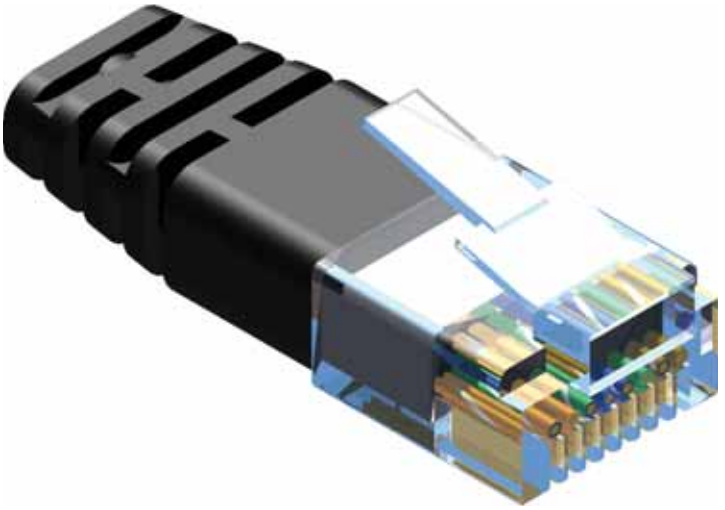
Data bits 8

Parity ..... None

Stop bits 1

Flow Control ..... None

NETWORK CABLE WIRING DIAGRAM



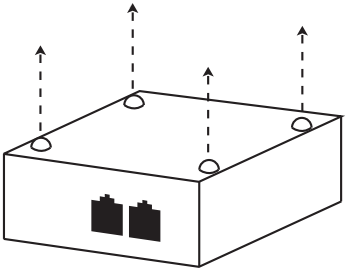
Gefen recommends the TIA/EIA-568-B wiring option. Please adhere to the table below when field-terminating the CAT-5 cable for use with Gefen products.

Pin	Color
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown

CAT-5 cabling comes in stranded and solid core types. Gefen recommends using solid core cabling.

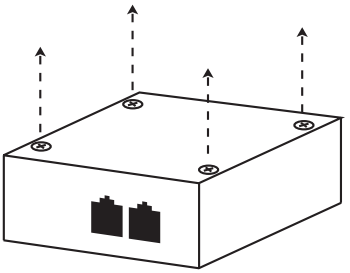
It is recommended to use one continuous run from one end to the other. Connecting through a patch is not recommended.

Mounting Plate Installation



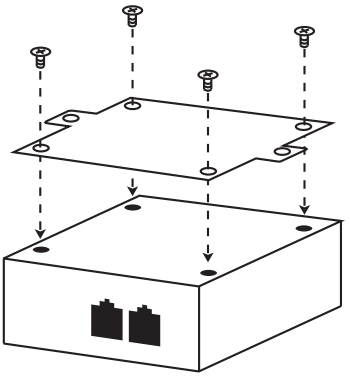
1

Remove the rubber feet covering the screws off the bottom of the unit.



2

Remove the screws.



3

Line up the mounting plates and screw it on to the unit.

SPECIFICATIONS

Video Amplifier Bandwidth ..... 350 MHz

Actual Bandwidth ..... 120 MHz

Input Video Signal ..... 1.2 Vp-p

Horizontal Frequency Range .....15-70 KHz

Vertical Frequency Range ..... 30-170 Hz

Video In ..... HD-15 Male

Video Out ..... HD-15 Female

Serial In (RS232 Connector) .....DB9 9-Pin Female

Serial Out (RS232 Connector).....DB9 9-Pin Male

Link Connector RJ-45

Power Consumption ..... 5 W (max.)

Power Supply ..... 5V DC

Dimensions ..... 4” W x 1.2” H x 3” D

Shipping Weight ..... 4 lbs.

WARRANTY

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.

2. Customers outside the US are responsible for shipping charges to and from Gefen.

3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, please visit Gefen's Warranty web page at http://www.gefen.com/kvm/aboutus/warranty.jsp

PRODUCT REGISTRATION

Please register your product online by visiting Gefen's web site at http://www.gefen.com/kvm/Registry/Registration.jsp

Rev A1

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